Injury (Total), Including Accidents and Adverse Effects

Summary of Methods and Data for Estimate of Costs of Illness

1. Estimated Total Economic Cost	$338 billion
Estimated Direct Cost	$89 billion
Estimated Indirect Cost	$248 billion
Estimated Quality Adjusted Life Years (QALYs) lost	13.7 million
Reference Year	1995
IC Providing the Estimate	NICHD
Direct Costs Include: Other related non-health costs	Yes
Indirect Costs Include:	
Mortality costs	Yes
Morbidity costs: Lost workdays and fringe benefits of patient	Yes
Morbidity costs: Reduced productivity of the patient	Yes
Lost earnings of unpaid care givers	No
Other related non-health costs	No
Interest Rate Used to Discount Out-Year Costs	2.5%
2. Category code(s) from the International Classification of Diseases, 9th Revision, Clinical Modification,(ICD-9-CM) for all diseases whose costs are included in this estimate: 800-999 (E810-E949).	
3. Estimate Includes Costs:	
Of related conditions beyond primary, strictly coded ICD-9-CM category	No
Attributable to the subject disease as a secondary diagnosis	No
Of conditions for which the subject disease is an underlying cause	No
4. Population Base for Cost Estimate (Total U.S. pop or other)	Total U.S. pop.
5. Annual (prevalence model) or Lifetime (incidence model) Cost:	Lifetime
6. Perspective of Cost Estimate (Total society, Federal budget, or Other)	Total Society
7. Approach to Estimation of Indirect Costs	Human Capital

8. Source of Cost Estimate:

Dr. Ted Miller, Children's Safety Network Economics and Insurance Resource Center, National Public Services Research Institute, Landover, Maryland, 1996, (301) 731-9891.

9. Other Indicators of Burden of Disease:

In 1995, the number of deaths from accidents and Injuries was 89,703 making this the 5th leading cause of death for all age groups. The injury rate decreased from 35.4 in 1991 to 34.1 in 1995 per 100,000 total U.S. population *CDC, MVSR, Oct 23, 1995; Vol 45(42):26*

10. Commentary:

Miller recently updated the 1989, *Cost of Injury in the U.S., Report to Congress* by Rice and colleagues. Accidents that lead to injuries represent an estimated lifetime cost of $338 billion in 1995 dollars. Including those requiring or not requiring hospitalization, costs associated with

non-fatal injuries remain a large proportion (69%) of the total lifetime cost of accidents compared to fatal injuries which represent 31%.

Rice et al. reported direct costs of injury using only costs associated with non-fatal injuries. Miller reexamined direct costs of injury associated with both, nonfatal and fatal accidents by injury mechanism and intent, then aggregated their costs. The direct cost of accidents, $89 billion, includes costs associated with emergency transportation, medical, hospital, rehabilitation, prescription, home modification, and related treatment/ancillary costs, as well as insurance administrative costs for medical claims compensation.

Indirect costs, $248 billion were computed at a 2.5% discount rate and included the victim's lost houshold work, lost wage, as well as fringe benefits based on the market value of lost work and housekeeping days due to both, fatal and non fatal accidents. All amounts were reported in 1995 dollars using the most recent incidence data from the early 1990s. These reported costs did not reflect the pain and suffering associated with injury or all of the burdens placed on the victim's family and friends, but they provided a way to quantitate the public health significance of accidents resulting in injuries.

Total quality-adjusted life-years (QALYs) associated with all injuries for all ages is 13.7 million. At a 2.5% discount rate, the QALYs can be monetized at a cost of $82,000 per QALY. (Miller) To avoid double-counting, this price is net of the productive component of the QALYs. The QALY approach follows the principles established by the Panel on Cost-Effectiveness in Health and Medicine convened by the U.S. Department of Health and Human Services (Gold et. Al. 1996) Monetization of the QALYs uses a value derived from 48 reasonably sound "willingness-to-pay" studies (Miller 1990).